

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:**Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-021716**Date Inspected:** 08-Mar-2011**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** Fred Von Hoff**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower Grillage**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above.

This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager was on site between the times noted above.

This QA Inspector had a conversation with QCM Jim Bowers regarding the fit up inspection of the various plates tack welded to the North, South, East and West Tower Grillage legs. This QA Inspector was informed the fit up inspection had been performed and accepted by QC Inspector Mike Johnson. This QA Inspector expressed a concern regarding the number cracked tack welds observed and was informed that QC personnel were performing Magnetic Particle Testing (MT) each day prior to the start of welding, in accordance with a the note on the document provided detailing the welding sequence. This QA Inspector later confirmed with QC Inspector Fred Von Hoff that a visual and MT inspection is performed on the tack welds at specific locations each date prior to welding. This QA Inspector performed a random visual verification of the fit up in West Tower leg and observed an excessive gap in the root opening of the PJP weld in the corner of outer skins B and C, plate P4. The root opening was approximately 10 mm for a length of 50 mm. This QA Inspector informed QC Inspector Fred Von Hoff of the observation and was informed the area would be marked for weld build up prior to welding of the PJP weld.

South Tower leg:

This QA Inspector randomly observed ABF Welding personnel Richard Garcia (#5892) and Jason Collins (#

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8128) were performing Shielded Metal Arc Welding (SMAW). ABF welding personnel Jason Collins (# 8128) was welding on fillet welds TGS-P3-F, TGS-P6-F and TGS-P9-F which appeared to approximately 95% completed at the end of the shift this date. ABF Welding personnel Richard Garcia (#5892) proceeded with repair welding at CJP weld TGS-P1-P5. Production welding at TGS-P5-P7 was also being performed. At the end of the shift this date welding at TGS-P1-P2 appeared to be completed, welding at TGS-P1-P5 and TGS-P5-P7 was approximately 50% complete.

East Tower leg:

This QA Inspector randomly observed ABF welding personnel Gilbert Peralta (#9453) was performing SMAW on various PJP welds. This QA Inspector observed ABF welding personnel Gilbert Peralta (#9453) had appeared to have completed the PJP welds and started the fill passes on CJP weld joint TGE-P2-P3 which was the first CJP weld on the weld sequencing map. This QA Inspector observed as a hand held torch was used to preheat the area and the temperature checked with a temperature indicating marker by Gilbert Peralta (#9453) prior to the start of welding.

West Tower leg:

This QA Inspector randomly observed ABF welding personnel Sal Sandoval (#2202) performing SMAW on various CJP welds depositing a minimum thickness of 4-5 mm. This QA Inspector randomly observed as Sal Sandoval (#2202) periodically used a hand held torch to preheat the area for welding. This QA Inspector occasionally verified the preheat temperature was greater than 200°F using a temperature indicating marker. This date CJP welds TGW-P1-P2, TGW-P9-P10, TGW-P3-P4 and TGW-P7-P8 appeared to have been filled approximately 4-5 mm. The welding observed by this QA Inspector appeared to follow the welding sequence map.

This QA Inspector observed ABF welding personnel Todd Jackson and various others moving the electronic power supply units, blankets and hoses to the opposite end of the work space for placement on the West Tower leg in preparation of welding the PJP weld joints.

This QA Inspector was informed by QC Inspector Fred Von Hoff the welding parameters for the personnel noted above were within the required heat input range in the Welding Procedure Specifications (WPS) ABF-WPS-D15-1162-4 for the PJP welds, ABF-WPS-D15-1042A-4 for CJP welds and ABF-WPS-D15-F1206 for Fillet welds. Note the welding parameters are the same for all three procedures. This QA Inspector randomly observed the amperages and voltages of ABF welding personnel noted above and they appeared to be within the ranges in the WPS. This QA Inspector observed that both 3.2 mm and 4.0 mm diameter E9018H4R electrodes were being used and stored in separate heated storage containers. This QA Inspector also observed the 1-hour exposure limit for the electrodes appeared to be monitored and adhered to.

The welding/work observed this date appeared to comply with the contract requirements. See photos below showing the limited space for welding personnel, QC personnel and QA personnel. See photos below.

This QA Inspector had previously received Weekly Welding Report submittal; ABF-Sub-001536 Rev-44. This QA Inspector performed a review of the documents to determine compliance with the Welding Quality Control Plan (WQCP) submitted by the contractor, compliance with the applicable contract requirements and to determine

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if any Quality Control (QC) documents were missing. This QA Inspector documented the findings on a weld specific tracking log and informed QA Inspector Bill Levell of the findings. This QA Inspector placed the reviewed documents in the applicable files.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above there were no notable conversations.



Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By: Hager,Craig

Quality Assurance Inspector

Reviewed By: Levell,Bill

QA Reviewer